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Maine Agricultural Experiment Station

BULLETIN No. 94.

AUGUST, 1903.

FERTILIZER INSPECTION.

This Bulletin contains the analyses of samples collected by the Station of the brands of Fertilizers licensed in 1903, and of a sample of "Scientif Fertilizer"; a copy of the law regarding the use of the Batcock test in the State; and the results of an experiment on the top dressing of grass land with chemicals.

Requests for bulletins should be addressed to the
AGRICULTURAL EXPERIMENT STATION,
Orono, Maine.

MAINE

AGRICULTURAL EXPERIMENT STATION,

ORONO, MAINE.

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FERTILIZER INSPECTION.

CHAS. D. WOODS, Director.

J. M. BARTLETT, Chemist in charge of Fertilizer Analysis.

The law regulating the sale of commercial fertilizers in this State calls for two bulletins each year. The first of these contains the analyses of the samples received from the manufacturer guaranteed to represent, within reasonable limits, the goods to be placed upon the market later. The second bulletin contains the analyses of the samples collected in the open market by a representative of the Station.

The analyses of the manufacturer's samples for this year were published in March. The present bulletin contains the analyses of the samples collected by the representative of the Director of the Station.

The figures which are given as the percentages of valuable ingredients guaranteed by the manufacturers are the minimum percentages of the guarantee. If, for instance, the guarantee is 2 to 3 per cent of nitrogen, it is evident that the dealer cannot be held to have agreed to furnish more than two per cent and so this percentage is taken as actual guarantee. The figures under the head of "found" are those showing the actual composition of the samples.

A comparison of the results of the analyses of the samples collected by the Station with the percentages guaranteed by the manufacturers shows that, as a rule, the fertilizers sold in the State are well up to the guarantee. In a few instances the particular lots of fertilizers sampled are not quite as good as they should be; there is, however, no case which appears to be an attempt to defraud. The comparisons indicate that the manufacturers do not intend to do much more than make good the minimum guarantee and this is all that the purchaser can safely expect.

DESCRIPTIVE LIST OF STATION SAMPLES, 1903.

| Station number. | THE AMERICAN AGRIC. CHEMICAL CO., N. Y. | |
|-----------------|-----------------------------------------------------------|------------------|
| | Manufacturer, place of business and brand. | Sampled at |
| 2984 | Bradley's Alkaline Bone and Potash | Bangor |
| 2985 | Bradley's Complete Manure for Potatoes and Vegetables.... | Bangor |
| 2986 | Bradley's Complete Manure with 10% Potash | Bangor |
| 2987 | Bradley's Corn Phosphate..... | Bangor |
| 2988 | Bradley's Eureka Fertilizer | Bangor |
| 2989 | Bradley's Niagara Phosphate | Bangor |
| 2990 | Bradley's Potato Fertilizer | Bangor .. |
| 3143 | Bradley's Potato Manure | Bangor |
| 2991 | Bradley's X. L. Superphosphate of Lime | Bangor .. |
| 2992 | Clark's Cove Bay State Fertilizer | Bangor |
| 2993 | Clark's Cove Bay State Fertilizer G. G. | Bangor |
| 2994 | Clark's Cove Bay State Fertilizer for Seeding Down..... | Portland .. |
| 2995 | Clark's Cove Defiance Complete Manure..... | Bangor |
| 2996 | Clark's Cove Great Planet Manure A. A. | Bangor |
| 2997 | Clark's Cove King Philip Alkaline Guano..... | Bangor |
| 2998 | Clark's Cove Potato Fertilizer | Bangor |
| 2999 | Clark's Cove Potato Manure... .. | Bangor |
| 3000 | Cleveland Fertilizer for All Crops | Bangor .. |
| 3001 | Cleveland High Grade Complete Manure..... | Bangor .. |
| 3002 | Cleveland Potato Phosphate | Bangor .. |
| 3003 | Cleveland Seeding Down Fertilizer..... | Bangor .. |
| 3004 | Cleveland Superphosphate | Bangor |
| 3005 | Crocker's Corn Phosphate | Portland |
| 3006 | Crocker's Grass and Oats Fertilizer..... | Portland |
| 3007 | Crocker's New Rival Ammoniated Superphosphate..... | Portland .. |
| 3008 | Crocker's Potato, Hop and Tobacco Phosphate..... | Portland |
| 3009 | Crocker's Special Potato Manure | Bangor |
| 3010 | Crocker's Aroostook Potato Special | Bangor |
| 3011 | Crocker's Superior Phosphate | Bangor |
| 3012 | Cumberland Guano for All Crops | Bangor |
| 3013 | Cumberland Potato Fertilizer | Portland |
| 3014 | Cumberland Seeding Down Manure | Bangor |
| 3015 | Cumberland Superphosphate..... | Bangor |
| 3016 | Darling's Blood, Bone and Potash | Houlton |
| 3017 | Great Eastern General Fertilizer | Portland .. |
| 3018 | Great Eastern Grass and Oats Fertilizer | Portland |
| 3019 | Great Eastern High Grade Special Potato Manure | Portland |
| 5020 | Great Eastern Northern Corn Special..... | Portland .. |
| 3021 | Great Eastern Potato Manure | Portland .. |
| 3022 | High Grade Fertilizer with 10% Potash..... | Fort Fairfield.. |
| 3026 | Pacific Dissolved Bone and Potash | Belfast |
| 3027 | Pacific Grass and Grain Fertilizer | Bangor |

ANALYSES OF STATION SAMPLES, 1903.

| Station number. | NITROGEN. | | | | | PHOSPHORIC ACID. | | | | | | | | POTASH. | |
|-----------------|-------------------|---------------------|--------|-------------|------|------------------|-----------|------------|------------|-------------|--------|-------------|-------|---------|-------------|
| | Soluble in water. | Insoluble in water. | Total. | | | Soluble. | Reverted. | Insoluble. | Available. | | Total. | | | Found. | Guaranteed. |
| | | | Found. | Guaranteed. | | | | | Found. | Guaranteed. | Found. | Guaranteed. | | | |
| % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| 2984 | 2.05 | 1.38 | 3.43 | 3.30 | 6.30 | 4.63 | 1.91 | 10.93 | 11.00 | 12.84 | 12.00 | 2.00 | 2.00 | 7.17 | 7.00 |
| 2985 | 2.19 | 1.40 | 3.59 | 3.30 | 5.79 | 3.17 | 1.57 | 8.96 | 8.00 | 10.53 | 9.00 | 7.17 | 7.00 | 10.72 | 10.00 |
| 2986 | 0.96 | 1.00 | 1.96 | 2.06 | 2.58 | 5.41 | 2.87 | 7.99 | 8.00 | 10.86 | 10.00 | 1.76 | 1.50 | 2.07 | 2.00 |
| 2987 | 0.24 | 1.10 | 1.34 | 1.03 | 5.30 | 2.63 | 3.09 | 7.98 | 8.00 | 11.02 | 10.00 | 2.07 | 2.00 | 1.45 | 1.00 |
| 2988 | 0.55 | 0.88 | 1.43 | 0.82 | 4.26 | 3.91 | 2.42 | 8.17 | 7.00 | 10.59 | 8.00 | 1.45 | 1.00 | 2.84 | 3.00 |
| 2989 | 0.67 | 1.54 | 2.21 | 2.06 | 6.09 | 3.43 | 2.17 | 9.52 | 8.00 | 11.69 | 10.00 | 2.84 | 3.00 | 5.25 | 5.00 |
| 3143 | 1.19 | 1.58 | 2.77 | 2.50 | 2.76 | 3.58 | 2.91 | 6.34 | 6.00 | 9.25 | 8.00 | 2.70 | 2.00 | 2.70 | 2.00 |
| 2991 | 1.21 | 1.38 | 2.59 | 2.50 | 4.26 | 3.43 | 3.73 | 7.69 | 9.00 | 11.42 | 11.00 | 2.51 | 2.00 | 1.67 | 1.50 |
| 2992 | 1.27 | 1.46 | 2.73 | 2.50 | 4.83 | 3.24 | 3.61 | 8.07 | 9.00 | 11.68 | 11.00 | 2.05 | 2.00 | 1.34 | 1.00 |
| 2993 | 1.04 | 0.86 | 1.90 | 2.06 | 5.07 | 3.45 | 3.19 | 8.52 | 8.00 | 11.71 | 10.00 | 2.32 | 2.00 | 2.32 | 2.00 |
| 2994 | 0.47 | 0.72 | 1.19 | 1.03 | 5.49 | 2.70 | 2.97 | 8.19 | 8.00 | 11.16 | 10.00 | 1.87 | 1.50 | 1.52 | 1.50 |
| 2995 | 0.45 | 0.86 | 1.31 | 0.82 | 3.67 | 3.83 | 2.28 | 7.50 | 7.00 | 9.78 | 8.00 | 2.12 | 2.00 | 2.12 | 2.00 |
| 2996 | 2.04 | 1.44 | 3.48 | 3.30 | 4.51 | 3.04 | 2.86 | 7.55 | 8.00 | 10.41 | 9.00 | 7.47 | 7.00 | 3.50 | 3.00 |
| 2997 | 0.51 | 0.80 | 1.31 | 1.03 | 5.44 | 3.06 | 3.64 | 8.50 | 8.00 | 12.14 | 10.00 | 2.29 | 2.00 | 2.29 | 2.00 |
| 2998 | 0.86 | 0.80 | 1.66 | 2.06 | 5.55 | 2.47 | 3.18 | 8.02 | 8.00 | 11.20 | 10.00 | 4.36 | 3.00 | 4.36 | 3.00 |
| 2999 | 1.13 | 1.60 | 2.73 | 2.50 | 3.06 | 2.96 | 3.06 | 6.02 | 6.00 | 9.08 | 8.00 | 2.12 | 2.00 | 2.12 | 2.00 |
| 3000 | 0.35 | 0.84 | 1.19 | 1.03 | 4.88 | 3.21 | 3.14 | 8.09 | 8.00 | 11.23 | 10.00 | 1.87 | 1.50 | 1.52 | 1.50 |
| 3001 | 2.06 | 1.44 | 3.50 | 3.30 | 5.02 | 3.01 | 2.69 | 8.03 | 8.00 | 10.72 | 9.00 | 7.47 | 7.00 | 3.50 | 3.00 |
| 3002 | 0.76 | 0.82 | 1.58 | 2.06 | 4.48 | 3.63 | 3.42 | 8.11 | 8.00 | 11.53 | 10.00 | 2.29 | 2.00 | 2.29 | 2.00 |
| 3003 | 0.58 | 0.68 | 1.26 | 1.03 | 5.38 | 3.37 | 2.51 | 8.75 | 8.00 | 11.26 | 10.00 | 1.87 | 1.50 | 1.52 | 1.50 |
| 3004 | 0.53 | 1.86 | 2.39 | 2.06 | 4.48 | 4.18 | 3.75 | 8.66 | 8.00 | 12.41 | 10.00 | 2.02 | 2.00 | 2.02 | 2.00 |
| 3005 | 0.78 | 1.44 | 2.22 | 2.06 | 4.98 | 3.07 | 2.97 | 8.05 | 8.00 | 11.02 | ..... | 1.96 | 2.00 | 1.96 | 2.00 |
| 3006 | ..... | ..... | ..... | ..... | 5.92 | 4.90 | 1.52 | 10.82 | 11.00 | 12.34 | ..... | 3.11 | 3.00 | 3.11 | 3.00 |
| 3007 | 0.46 | 0.86 | 1.32 | 1.03 | 5.65 | 2.39 | 2.65 | 8.04 | 8.00 | 10.69 | ..... | 10.84 | 10.00 | 10.84 | 10.00 |
| 3008 | 1.20 | 0.94 | 2.14 | 2.06 | 5.36 | 3.91 | 1.62 | 9.27 | 8.00 | 10.89 | ..... | 6.64 | 6.00 | 6.64 | 6.00 |
| 3009 | 1.29 | 1.90 | 3.19 | 3.29 | 5.15 | 2.55 | 2.68 | 7.70 | 6.00 | 10.38 | ..... | 2.17 | 2.00 | 2.17 | 2.00 |
| 3010 | 0.76 | 1.30 | 2.06 | 2.06 | 6.19 | 1.98 | 1.91 | 8.17 | 8.00 | 10.08 | ..... | 2.34 | 2.00 | 2.34 | 2.00 |
| 3011 | 0.42 | 0.78 | 1.20 | 0.82 | 4.72 | 3.36 | 2.93 | 8.08 | 8.00 | 11.01 | ..... | 2.36 | 3.00 | 2.36 | 3.00 |
| 3012 | 0.45 | 0.82 | 1.27 | 1.03 | 5.69 | 3.04 | 3.06 | 8.73 | 8.00 | 11.79 | 10.00 | 2.18 | 2.00 | 2.18 | 2.00 |
| 3013 | 1.01 | 1.14 | 2.15 | 2.06 | 5.34 | 3.16 | 2.62 | 8.50 | 8.00 | 11.12 | 10.00 | 1.69 | 1.50 | 1.69 | 1.50 |
| 3014 | 5.36 | 0.88 | 1.24 | 1.03 | 4.98 | 3.42 | 3.16 | 8.40 | 8.00 | 11.56 | 10.00 | 7.29 | 7.00 | 7.29 | 7.00 |
| 3015 | 1.23 | 0.84 | 2.07 | 2.06 | 4.78 | 4.03 | 2.72 | 8.81 | 8.00 | 11.53 | 10.00 | 4.01 | 4.00 | 4.01 | 4.00 |
| 3016 | 2.39 | 1.50 | 3.89 | 4.10 | 3.27 | 4.19 | 2.41 | 7.46 | 7.00 | 9.87 | 8.00 | 2.05 | 2.00 | 2.05 | 2.00 |
| 3017 | 0.43 | ..... | 1.13 | 0.82 | 3.73 | 4.41 | 3.62 | 8.14 | 8.00 | 11.76 | ..... | 10.18 | 10.00 | 10.18 | 10.00 |
| 3018 | ..... | ..... | ..... | ..... | 5.95 | 5.19 | 1.30 | 11.14 | 11.00 | 12.44 | ..... | 1.51 | 1.50 | 1.51 | 1.50 |
| 3019 | 1.20 | 2.10 | 3.30 | 3.29 | 1.60 | 4.62 | 1.20 | 6.22 | 6.00 | 7.42 | ..... | 3.30 | 3.00 | 3.30 | 3.00 |
| 3020 | 0.85 | 1.50 | 2.35 | 2.06 | 4.94 | 3.17 | 2.74 | 8.11 | 8.00 | 10.85 | ..... | 9.64 | 10.00 | 9.64 | 10.00 |
| 3021 | 0.87 | 1.28 | 2.15 | 2.06 | 4.66 | 3.59 | 2.32 | 8.25 | 8.00 | 10.57 | 7.00 | 2.04 | 2.00 | 2.04 | 2.00 |
| 3022 | 0.82 | 1.68 | 2.50 | 2.40 | 4.64 | 2.21 | 2.56 | 6.85 | 6.00 | 9.41 | 7.00 | 1.36 | 1.00 | 1.36 | 1.00 |
| 3026 | ..... | ..... | ..... | ..... | 6.32 | 4.74 | 1.30 | 11.06 | 10.00 | 12.36 | 12.00 | ..... | ..... | ..... | ..... |
| 3027 | 0.55 | 0.74 | 1.29 | ..... | 3.60 | 6.52 | 1.28 | 10.12 | 7.00 | 11.40 | 8.00 | ..... | ..... | ..... | ..... |

DESCRIPTIVE LIST OF STATION SAMPLES, 1903.

| Station number. | Manufacturer, place of business and brand. | Sampled at |
|-----------------|--------------------------------------------------------------------------------------------------------|-------------------|
| 3028 | Pacific High Grade General Fertilizer..... | Bangor |
| 3029 | Pacific Nobsque Guano. | Bangor |
| 3030 | Pacific Potato Special..... | Bangor |
| 3031 | Packer's Union Annual Corn Fertilizer | Portland |
| 3032 | Packer's Union Economical Vegetable Guano..... | Bangor |
| 3033 | Packer's Union Gardener's Complete Manure | Bangor |
| 3034 | Packer's Union Potato Manure.... | Portland |
| 3035 | Packer's Union Universal Fertilizer | Portland |
| 3036 | Packer's Union Wheat, Oats and Clover Fertilizer. | Portland |
| 3038 | Quinnipiac Corn Manure | Bangor |
| 3039 | Quinnipiac Market Garden Manure.... | Fort Fairfield .. |
| 3041 | Quinnipiac Potato Manure..... | Bangor |
| 3042 | Quinnipiac Potato Phosphate.... | Bangor |
| 3043 | Quinnipiac Seeding Down Manure. | Belfast |
| 3045 | Read's Potato Manure. | Bangor |
| 3046 | Read's Practical Potato Special..... | Portland |
| 3047 | Read's Standard Superphosphate | Bangor |
| 3048 | Read's Sure Catch Fertilizer. | Bangor |
| 3049 | Read's Vegetable and Vine Fertilizer..... | Bangor |
| 3050 | Soluble Pacific Guano | Bangor |
| 3051 | Standard A Brand | Portland .. |
| 3052 | Standard Bone and Potash..... | Bangor |
| 3053 | Standard Complete Manure..... | Caribou |
| 3054 | Standard Fertilizer | Bangor |
| 3055 | Standard Guano for All Crops | Bangor |
| 3056 | Standard Special for Potatoes.... | Portland |
| 3058 | Williams and Clark's Americus Corn Phosphate | Bangor |
| 3059 | Williams and Clark's Americus High Grade Special..... | Bangor |
| 3060 | Williams and Clark's Americus Potato Manure | Bangor |
| 3062 | Williams and Clark's Royal Bone Phosphate for All Crops... THE BOWKER FERTILIZER CO., BOSTON, MASS. | Bangor |
| 3063 | Bowker's Corn Phosphate | Portland |
| 3064 | Bowker's Early Potato Manure..... | Portland |
| 3065 | Bowker's Farm and Garden Phosphate..... | Portland |
| 3066 | Bowker's Hill and Drill Phosphate | Portland |
| 3067 | Bowker's Potash Bone | Portland |
| 3068 | Bowker's Potash or Staple Phosphate..... | Bangor |
| 3070 | Bowker's Potato and Vegetable Phosphate..... | Portland |
| 3071 | Bowker's Six Per cent Fertilizer.... | Bangor .. |
| 3072 | Bowker's Square Brand Bone and Potash..... | Portland |

ANALYSES OF STATION SAMPLES, 1903.

| Station number. | NITROGEN. | | | | PHOSPHORIC ACID. | | | | | | | | POTASH. | |
|-----------------|-------------------|---------------------|--------|------------------|------------------|-----------|------------|-----------|------------------|--------|------------------|--------|-------------|--|
| | Soluble in water. | Insoluble in water. | Total. | | Soluble. | Reverted. | Insoluble. | Available | | Total. | | Found. | Guaranteed. | |
| | | | Found. | Guaran- teed. | | | | Found. | Guaran- teed. | Found. | Guaran- teed. | | | |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | |
| 3028 | 1.76 | 1.54 | 3.30 | 3.30 | 4.58 | 2.77 | 2.81 | 7.35 | 8.00 | 10.11 | 9.00 | 7.77 | 7.00 | |
| 3029 | 0.36 | 0.90 | 1.26 | 1.03 | 5.14 | 3.45 | 2.97 | 8.59 | 8.00 | 11.56 | 10.00 | 2.10 | 2.00 | |
| 3030 | 0.92 | 1.34 | 2.26 | 2.06 | 5.61 | 2.59 | 3.28 | 8.20 | 8.00 | 11.48 | 10.00 | 3.03 | 3.00 | |
| 3031 | 1.23 | 1.24 | 2.47 | 2.47 | 5.71 | 4.16 | 3.00 | 9.87 | 9.00 | 12.87 | ..... | 2.13 | 2.00 | |
| 3032 | 0.29 | 0.96 | 1.25 | 1.25 | 5.01 | 2.79 | 3.48 | 7.80 | 6.00 | 11.28 | ..... | 3.41 | 3.00 | |
| 3033 | 0.80 | 1.68 | 2.48 | 2.47 | 4.73 | 1.92 | 1.91 | 6.67 | 6.00 | 8.58 | ..... | 10.13 | 10.00 | |
| 3034 | 1.09 | 1.22 | 2.31 | 2.06 | 4.07 | 5.29 | 2.62 | 9.36 | 8.00 | 11.98 | ..... | 6.57 | 6.00 | |
| 3035 | 0.39 | 0.72 | 1.11 | 0.82 | 4.24 | 3.76 | 4.23 | 8.00 | 8.00 | 12.23 | ..... | 3.93 | 4.00 | |
| 3036 | ..... | ..... | ..... | ..... | 6.76 | 6.07 | 1.40 | 11.22 | 11.00 | 12.62 | ..... | 2.11 | 2.00 | |
| 3038 | 0.86 | 1.32 | 2.18 | 2.06 | 6.57 | 2.80 | 2.62 | 9.37 | 8.00 | 11.99 | 10.00 | 1.81 | 1.50 | |
| 3039 | 1.34 | 2.30 | 3.64 | 3.30 | 5.25 | 2.79 | 2.53 | 8.04 | 8.00 | 10.57 | 9.00 | 7.81 | 7.00 | |
| 3041 | 1.08 | 1.54 | 2.62 | 2.50 | 3.16 | 3.17 | 3.00 | 6.33 | 6.00 | 9.33 | 8.00 | 5.51 | 5.00 | |
| 3042 | 1.01 | 1.36 | 2.37 | 2.06 | 5.74 | 2.73 | 3.29 | 8.47 | 8.00 | 11.76 | 10.00 | 3.00 | 3.00 | |
| 3043 | 0.40 | 0.82 | 1.22 | 1.03 | 6.22 | 3.06 | 3.30 | 9.28 | 8.00 | 12.58 | 10.00 | 1.97 | 2.00 | |
| 3045 | 2.02 | 1.34 | 3.36 | 2.40 | 2.55 | 3.42 | 2.83 | 6.07 | 6.00 | 8.90 | 7.00 | 11.70 | 10.00 | |
| 3046 | 0.34 | 0.74 | 1.08 | 0.82 | 2.25 | 3.06 | 2.95 | 5.31 | 4.00 | 8.26 | 5.00 | 7.81 | 8.00 | |
| 3047 | 0.48 | 0.60 | 1.08 | 0.82 | 4.23 | 3.59 | 4.06 | 7.82 | 8.00 | 11.88 | 10.00 | 4.03 | 4.00 | |
| 3048 | ..... | ..... | ..... | ..... | 5.82 | 4.58 | 2.23 | 10.40 | 10.00 | 12.63 | 12.00 | 2.02 | 2.00 | |
| 3049 | 1.12 | 1.14 | 2.26 | 2.06 | 4.85 | 2.56 | 3.02 | 7.41 | 8.00 | 10.43 | 10.00 | 7.84 | 6.00 | |
| 3050 | 1.08 | 0.92 | 2.00 | 2.06 | 5.26 | 3.39 | 2.95 | 8.65 | 8.00 | 11.60 | 10.00 | 1.63 | 1.50 | |
| 3051 | 0.40 | 0.82 | 1.22 | 0.82 | 3.43 | 4.06 | 4.06 | 7.49 | 7.00 | 11.55 | 8.00 | 1.15 | 1.00 | |
| 3052 | ..... | ..... | ..... | ..... | 5.71 | 4.61 | 2.25 | 10.32 | 10.00 | 12.57 | 12.00 | 2.02 | 2.00 | |
| 3053 | 2.22 | 1.52 | 3.74 | 3.30 | 4.63 | 4.35 | 1.59 | 8.98 | 8.00 | 10.57 | 9.00 | 7.14 | 7.00 | |
| 3054 | 1.18 | 0.82 | 2.00 | 2.06 | 5.10 | 3.61 | 2.82 | 8.71 | 8.00 | 11.53 | 10.00 | 1.64 | 1.50 | |
| 3055 | 0.49 | 0.78 | 1.27 | 1.03 | 5.30 | 3.54 | 3.52 | 8.84 | 8.00 | 12.36 | 10.00 | 2.40 | 2.00 | |
| 3056 | 0.85 | 1.38 | 2.23 | 2.06 | 5.66 | 2.66 | 2.41 | 8.32 | 8.00 | 10.73 | 10.00 | 3.17 | 3.00 | |
| 3058 | 0.96 | 0.94 | 1.90 | 2.06 | 5.10 | 3.47 | 2.83 | 8.57 | 8.00 | 11.40 | 10.00 | 1.65 | 1.50 | |
| 3059 | 1.97 | 1.44 | 3.41 | 3.30 | 4.77 | 2.61 | 2.86 | 7.38 | 8.00 | 10.24 | 9.00 | 7.36 | 7.00 | |
| 3060 | 0.86 | 0.72 | 1.58 | 2.06 | 4.27 | 4.14 | 3.07 | 8.41 | 8.00 | 11.48 | 10.00 | 4.33 | 3.00 | |
| 3062 | 0.43 | 0.82 | 1.25 | 1.03 | 5.10 | 3.12 | 3.30 | 8.22 | 8.00 | 11.52 | 10.00 | 2.25 | 2.00 | |
| 3063 | 0.44 | 1.38 | 1.82 | 1.50 | 5.79 | 2.88 | 3.13 | 8.67 | 8.00 | 11.80 | 10.00 | 2.14 | 2.00 | |
| 3064 | 1.81 | 1.52 | 3.33 | 3.00 | 4.64 | 3.15 | 3.06 | 7.79 | 7.00 | 10.85 | 9.00 | 7.45 | 7.00 | |
| 3065 | 0.50 | 1.28 | 1.78 | 1.50 | 5.45 | 2.82 | 2.97 | 8.27 | 8.00 | 11.24 | 10.00 | 2.06 | 2.00 | |
| 3066 | 0.96 | 1.58 | 2.54 | 2.25 | 5.97 | 4.38 | 2.65 | 10.35 | 9.00 | 13.00 | 11.00 | 2.13 | 2.00 | |
| 3067 | 0.41 | 0.74 | 1.15 | 0.75 | 5.14 | 3.15 | 3.61 | 8.29 | 6.00 | 11.90 | 8.00 | 2.06 | 2.00 | |
| 3068 | 0.50 | 0.44 | 0.94 | 0.75 | 3.25 | 4.52 | 2.82 | 7.67 | 8.00 | 10.49 | 10.00 | 2.96 | 3.00 | |
| 3070 | 0.57 | 1.34 | 1.91 | 1.50 | 5.89 | 2.83 | 2.56 | 8.72 | 9.00 | 11.34 | 11.00 | 2.10 | 2.00 | |
| 3071 | 0.48 | 0.44 | 0.92 | 0.75 | 1.71 | 4.54 | 2.62 | 6.25 | 6.00 | 8.87 | 9.00 | 6.57 | 6.00 | |
| 3072 | 0.60 | 1.16 | 1.76 | 1.50 | 5.47 | 2.81 | 3.33 | 8.28 | 6.00 | 11.61 | 12.00 | 2.14 | 2.00 | |

DESCRIPTIVE LIST OF STATION SAMPLES, 1903.

| Station number. | Manufacturer, place of business and brand. | Sampled at |
|-----------------|-------------------------------------------------------------|----------------------|
| 3073 | Bowker's Sure Crop Phosphate | Portland |
| 3074 | Bowker's Ten Per Cent Manure | Houlton |
| 3144 | Bowker's Fresh Ground Bone | Portland |
| 3145 | Bowker's Superphosphate for Grass and Grain | Bangor |
| 3149 | Bowker's Market Garden Fertilizer | Bangor |
| 3075 | Maine State Grange Chemicals | Houlton |
| 3076 | Maine State Grange Potato Manure | Houlton |
| 3077 | Stockbridge Corn and Grain Manure | Portland |
| 3078 | Stockbridge Potato Manure | Portland |
| 3079 | Stockbridge Seeding Down Manure | Bangor |
| | E. FRANK COE CO., NEW YORK, N. Y. | |
| 3080 | E. Frank Coe's Celebrated Potato Fertilizer | Bangor |
| 3082 | E. Frank Coe's Columbian Corn Fertilizer | Bangor |
| 3083 | E. Frank Coe's Columbian Potato Fertilizer | Bangor |
| 3084 | E. Frank Coe's Excelsior Potato Fertilizer | Bangor |
| 3085 | E. Frank Coe's Grass and Grain Special | Bangor |
| 3086 | E. Frank Coe's High Grade Ammoniated Bone Superphos. | Bangor |
| 3087 | E. Frank Coe's High Grade Potato Fertilizer | Bangor |
| 3088 | E. Frank Coe's New Englander Corn Fertilizer | Bangor |
| 3089 | E. Frank Coe's New Englander Potato Fertilizer | Bangor |
| 3090 | E. Frank Coe's Prize Brand Grass and Grain Fertilizer | Bangor |
| 3091 | E. Frank Coe's Red Brand Excelsior Guano | Bangor |
| 3147 | E. Frank Coe's Standard Grade Ammoniated Bone Super | Bangor |
| | FERNALD, KEENE AND TRUE CO., W. PORTLAND, ME. | |
| 3093 | Fernald, Keene and True's Sweet Corn Manure | Poland |
| | WALTER G. FOSS, FOXCROFT, ME. | |
| 3094 | New Market Fertilizer | Foxcroft |
| | HUBBARD FERTILIZER CO., BALTIMORE, MD. | |
| 3151 | Hubbard's Royal Ensign for Early Market Vegetables | Mechanic Falls |
| | LISTER'S AGRICUL. CHEM. WORKS, NEWARK, N. J. | |
| 3095 | Lister's Animal Bone and Potash | Portland |
| 3096 | Lister's High Grade Special for Spring Crops | Portland |
| 3102 | Lister's Oneida Special | Portland |
| 3097 | Lister's Potato Manure | Portland |
| 3099 | Lister's Special Corn | Portland |
| 3100 | Lister's Special Potato | Portland |
| 3101 | Lister's Success Fertilizer | Portland |
| | LOWELL FERTILIZER CO., BOSTON, MASS | |
| 3103 | Swift's Lowell Animal Brand | Bangor |
| 3104 | Swift's Lowell Bone Fertilizer | Bangor |
| 3105 | Swift's Lowell Dissolved Bone and Potash | Bangor |
| 3107 | Swift's Lowell Potato Manure | Bangor |
| 3108 | Swift's Lowell Potato Phosphate | Bangor |

ANALYSES OF STATION SAMPLES, 1903.

| Station number. | NITROGEN. | | | | PHOSPHORIC ACID. | | | | | | | | POTASH. | |
|-----------------|-------------------|---------------------|--------|------------------|------------------|-----------|------------|------------|------------------|---------|------------------|--------|-------------|--|
| | Soluble in water. | Insoluble in water. | Total. | | Soluble. | Reverted. | Insoluble. | Available. | | Total. | | Found. | Guaranteed. | |
| | | | Found. | Guaran- teed. | | | | Found. | Guaran- teed. | Found. | Guaran- teed. | | | |
| 3073 | % 0.42 | % 0.78 | % 1.20 | % 0.75 | % 4.86 | % 4.17 | % 3.41 | % 9.03 | % 9.00 | % 12.44 | % 11.00 | % 2.23 | % 2.00 | |
| 3074 | 0.37 | 0.74 | 1.11 | 0.75 | 1.67 | 3.95 | 2.08 | 5.62 | 5.00 | 7.70 | 7.00 | 9.53 | 10.00 | |
| 3144 | ..... | ..... | 2.96 | 2.25 | ..... | ..... | ..... | ..... | ..... | 24.58 | 18.00 | ..... | ..... |  |
| 3145 | ..... | ..... | ..... | ..... | 5.47 | 4.46 | 2.50 | 9.93 | 10.00 | 2.43 | 11.00 | 2.00 | 2.00 | |
| 3149 | 1.23 | 1.54 | 2.76 | 2.25 | 2.87 | 2.59 | 3.01 | 5.46 | 6.00 | 8.47 | 7.00 | 9.50 | 10.00 | |
| 3075 | 1.16 | 1.44 | 2.60 | 2.50 | 4.86 | 3.02 | 2.73 | 7.88 | 8.00 | 10.61 | 12.00 | 4.86 | 4.00 | |
| 3076 | 0.72 | 1.02 | 1.74 | 1.50 | 4.07 | 5.63 | 3.75 | 9.70 | 9.00 | 13.45 | 12.00 | 11.72 | 12.00 | |
| 3077 | 1.99 | 1.50 | 3.49 | 3.00 | 4.58 | 3.08 | 3.06 | 7.66 | 7.00 | 10.72 | 9.00 | 7.56 | 7.00 | |
| 3078 | 1.15 | 2.10 | 3.25 | 3.00 | 3.86 | 2.61 | 1.38 | 6.47 | 6.00 | 7.85 | 8.00 | 11.27 | 10.00 | |
| 3079 | 1.13 | 1.52 | 2.65 | 2.25 | 2.66 | 2.69 | 2.78 | 5.35 | 6.00 | 8.13 | 10.00 | 10.50 | 10.00 | |
| 3080 | 0.63 | 1.10 | 1.73 | 1.65 | 7.53 | 1.58 | 2.02 | 9.11 | 8.00 | 11.13 | 9.50 | 3.79 | 4.00 | |
| 3082 | 0.87 | 0.82 | 1.69 | 1.20 | 6.56 | 2.30 | 3.24 | 8.86 | 8.50 | 12.06 | 10.00 | 2.65 | 2.50 | |
| 3083 | 0.72 | 0.88 | 1.60 | 1.20 | 6.57 | 2.25 | 3.19 | 8.82 | 8.50 | 12.01 | 10.00 | 2.55 | 2.50 | |
| 3084 | 1.31 | 1.12 | 2.43 | 2.40 | 6.14 | 1.73 | 1.86 | 7.87 | 7.00 | 9.73 | 8.50 | 7.88 | 8.00 | |
| 3085 | 0.78 | 1.24 | 2.02 | 0.80 | 7.26 | 2.23 | 2.42 | 9.49 | 8.50 | 11.91 | 10.00 | 2.53 | 1.50 | |
| 3086 | 0.83 | 1.22 | 2.05 | 1.85 | 7.50 | 1.90 | 1.81 | 9.40 | 9.00 | 11.21 | 13.00 | 2.54 | 2.25 | |
| 3087 | 1.17 | 1.32 | 2.49 | 2.40 | 6.08 | 1.91 | 2.04 | 7.99 | 7.50 | 10.03 | 8.50 | 5.67 | 6.00 | |
| 3088 | 0.62 | 0.54 | 1.16 | 0.80 | 4.05 | 3.52 | 3.32 | 7.57 | 7.50 | 10.89 | 9.00 | 2.95 | 3.00 | |
| 3089 | 0.66 | 0.54 | 1.20 | 0.80 | 4.39 | 3.36 | 3.34 | 7.75 | 7.50 | 11.09 | 9.00 | 2.94 | 3.00 | |
| 3090 | ..... | ..... | ..... | ..... | 7.78 | 3.08 | 3.34 | 10.86 | 10.50 | 14.20 | 12.00 | 1.87 | 2.00 | |
| 3091 | 2.29 | 1.08 | 3.37 | 3.40 | 7.77 | 1.77 | 1.56 | 9.54 | 9.00 | 11.10 | 10.50 | 5.67 | 6.00 | |
| 3147 | 0.79 | 0.64 | 1.43 | 1.25 | 6.70 | 3.03 | 2.82 | 9.73 | 8.50 | 12.55 | ..... | 2.17 | 2.00 | |
| 3093 | 1.32 | 1.22 | 2.54 | 2.50 | 5.82 | 3.08 | 1.50 | 8.98 | 9.00 | 10.48 | 11.00 | 2.23 | 2.00 | |
| 3094 | 0.61 | ..... | 0.61 | 0.40 | 6.89 | 3.27 | 0.48 | 10.16 | 7.00 | 11.04 | 8.00 | 2.80 | 2.00 | |
| 3151 | 1.52 | 1.06 | 2.58 | 2.47 | 5.50 | 2.53 | 1.70 | 8.03 | 8.00 | 9.73 | ..... | 4.23 | 4.00 | |
| 3095 | ..... | ..... | ..... | ..... | 5.20 | 4.98 | 2.42 | 10.18 | 10.00 | 12.60 | 11.00 | 2.30 | 2.00 | |
| 3096 | 0.87 | 0.84 | 1.71 | 1.65 | 4.34 | 3.29 | 3.25 | 7.63 | 8.00 | 10.38 | 10.00 | 10.92 | 10.00 | |
| 3102 | 0.36 | 0.94 | 1.30 | 0.82 | 3.01 | 6.19 | 0.64 | 9.20 | 7.00 | 9.84 | 8.00 | 1.09 | 1.00 | |
| 3097 | 1.60 | 1.38 | 2.98 | 3.30 | 3.32 | 4.64 | 2.42 | 7.96 | 8.00 | 10.38 | 9.00 | 6.81 | 7.00 | |
| 3099 | 0.66 | 1.04 | 1.70 | 1.65 | 5.95 | 2.53 | 2.17 | 8.50 | 8.00 | 10.67 | 9.00 | 3.11 | 3.00 | |
| 3100 | 0.67 | 1.02 | 1.69 | 1.65 | 5.84 | 2.66 | 2.39 | 8.50 | 8.00 | 10.89 | 9.00 | 3.01 | 3.00 | |
| 3101 | 0.40 | 0.86 | 1.26 | 1.24 | 4.48 | 4.34 | 2.17 | 8.82 | 9.00 | 10.99 | 11.00 | 1.82 | 2.00 | |
| 3103 | 1.48 | 1.30 | 2.78 | 2.47 | 6.99 | 2.30 | 1.81 | 9.29 | 9.00 | 11.10 | 10.00 | 4.07 | 4.00 | |
| 3104 | 0.75 | 1.08 | 1.83 | 1.65 | 5.69 | 2.78 | 1.26 | 8.47 | 8.00 | 9.73 | 9.00 | 2.72 | 3.00 | |
| 3105 | 0.76 | 1.10 | 1.86 | 1.65 | 6.27 | 2.63 | 1.79 | 8.90 | 9.00 | 10.69 | 10.00 | 2.61 | 2.00 | |
| 3107 | 0.99 | 0.86 | 1.85 | 1.65 | 4.47 | 2.46 | 2.11 | 6.93 | 7.00 | 9.04 | 8.00 | 4.26 | 4.00 | |
| 3108 | 1.52 | 1.28 | 2.80 | 2.40 | 5.52 | 2.25 | 2.21 | 7.77 | 8.00 | 9.98 | 9.00 | 6.34 | 6.00 | |

DESCRIPTIVE LIST OF STATION SAMPLES, 1903.

| Station number. | Manufacturer, place of business and brand. | Sampled at |
|-----------------|--------------------------------------------------------------------|------------------------|
| | NATIONAL FERTILIZER CO., BRIDGEPORT, CONN. | |
| 3110 | Chittenden's Complete Fertilizer | Houlton |
| | NEW ENGLAND FERTILIZER CO., BOSTON, MASS. | |
| 3112 | New England Corn Phosphate | Portland |
| 3113 | New England Potato Fertilizer. | Bangor |
| 3114 | New England Seeding Fertilizer | Bangor |
| 3148 | New England Superphosphate | Bangor |
| | PARMENTER & POLSEY FERT. CO., PEABODY, MASS. | |
| 3117 | P. & P. Grain Grower. | Bangor |
| 3118 | P. & P. Potato Fertilizer | Presque Isle |
| 3120 | Special Potato Fertilizer. | Presque Isle |
| 3121 | Star Brand Superphosphate | Bangor |
| | PORTLAND RENDERING CO., PORTLAND, ME. | |
| 3122 | Bone Tankage. | Portland |
| | PROVINCIAL CHEMICAL FERT. CO., Lt'd, St. John, N.B. | |
| 3123 | Special Potato Phosphate. | Presque Isle |
| | RUSSIA CEMENT CO., GLOUCESTER, MASS. | |
| 3125 | Essex A 1 Superphosphate | Caribou |
| 3126 | Essex Complete Manure for Corn, Grain and Grass. | Bangor |
| 3127 | Essex Complete Manure for Potatoes, Roots and Vegetables | Houlton |
| | | |
| 3128 | Essex Aroostook County Special Potato Manure. | Monticello |
| 3129 | Essex Corn Fertilizer | Bangor |
| 3130 | Essex Market Garden and Potato Manure | Caribou |
| 3131 | Essex XXX Fish and Potash. | Presque Isle |
| | SAGADAHOC FERTILIZER CO., BOWDOINHAM, ME. | |
| 3132 | Aroostook Potato Manure | Presque Isle |
| 3133 | Dirigo Fertilizer. | Bowdoinham |
| 3134 | Sagadahoc High Grade Superphosphate. | Bowdoinham |
| | | |
| 3135 | Special Clover Fertilizer. | Presque Isle |
| 3136 | Sagadahoc Special Potato Fertilizer. | Presque Isle |
| 3137 | XX Chemicals | Bowdoinham |
| | | |
| 3138 | Yankee Fertilizer | Bowdoinham |
| 3139 | Acid Phosphate. | Bowdoinham |
| 3140 | Muriate of Potash | Bowdoinham |
| 3141 | Nitrate of Soda. | Bowdoinham |
| | JOHN WATSON, HOULTON, ME. | |
| 3142 | Watson's Improved High Grade Potato Phosphate | Houlton |

ANALYSES OF STATION SAMPLES, 1903.

| Station number. | NITROGEN. | | | | PHOSPHORIC ACID. | | | | | | | | POTASH. | |
|-----------------|-------------------|---------------------|--------|-------------|------------------|-----------|------------|------------|-------------|--------|-------------|--------|-------------|--|
| | Soluble in water. | Insoluble in water. | Total. | | Soluble. | Reverted. | Insoluble. | Available. | | Total. | | Found. | Guaranteed. | |
| | | | Found. | Guaranteed. | | | | Found. | Guaranteed. | Found. | Guaranteed. | | | |
| 3110 | 1.74 | 1.72 | 3.46 | 3.30 | 6.81 | 1.60 | 1.75 | 8.41 | 8.00 | 10.16 | 10.00 | 6.53 | 6.00 | |
| 3112 | 0.97 | 0.86 | 1.83 | 1.65 | 4.43 | 2.75 | 3.98 | 7.18 | 8.00 | 11.16 | 9.00 | 4.24 | 3.00 | |
| 3113 | 1.96 | 0.66 | 1.72 | 1.64 | 4.90 | 2.23 | 1.37 | 7.13 | 7.00 | 8.50 | 8.00 | 4.01 | 4.00 | |
| 3114 | 0.67 | 0.84 | 1.51 | 1.22 | 2.27 | 5.26 | 2.04 | 7.53 | 7.00 | 9.81 | 8.00 | 2.44 | 2.00 | |
| 3148 | 1.32 | 1.54 | 2.86 | 2.46 | 5.74 | 2.68 | 2.36 | 8.42 | 9.00 | 10.78 | 10.00 | 4.43 | 4.00 | |
| 3117 | 1.06 | 0.38 | 1.44 | 0.82 | 3.70 | 3.98 | 2.65 | 7.68 | 7.00 | 10.33 | 8.00 | 2.22 | 2.00 | |
| 3118 | 0.99 | 0.82 | 1.81 | 1.64 | 2.84 | 3.49 | 2.11 | 6.33 | 6.00 | 8.44 | 7.00 | 5.92 | 6.00 | |
| 3120 | 2.38 | 1.10 | 3.48 | 3.29 | 5.20 | 4.10 | 1.26 | 9.30 | 8.00 | 10.56 | 9.00 | 7.30 | 7.00 | |
| 3121 | 1.07 | 0.82 | 1.89 | 1.64 | 2.11 | 4.97 | 3.69 | 7.08 | 7.00 | 10.77 | 8.00 | 2.88 | 2.50 | |
| 3122 | 1.66 | 3.64 | 5.30 | 6.00 | ..... | ..... | 8.18 | 7.10 | ..... | 15.28 | 14.00 | .. | ..... |  |
| 3123 | 1.80 | 1.82 | 3.62 | 3.75 | 6.86 | 1.53 | 5.17 | 8.39 | 10.00 | 13.56 | .... | 3.44 | 6.00 | |
| 3125 | 0.25 | 0.92 | 1.17 | 1.00 | 1.72 | 7.25 | 5.21 | 8.97 | 7.00 | 14.18 | 9.00 | 1.89 | 2.00 | |
| 3126 | 0.84 | 2.26 | 3.10 | 3.30 | 4.34 | 2.51 | 4.47 | 6.85 | 7.00 | 11.32 | 9.50 | 10.35 | 9.50 | |
| 3127 | 1.37 | 2.62 | 3.99 | 3.70 | 5.77 | 1.76 | 4.91 | 7.53 | 7.00 | 12.44 | 9.00 | 9.60 | 8.50 | |
| 3128 | 0.94 | 1.86 | 2.80 | 2.47 | 3.86 | 3.33 | 3.97 | 7.19 | 7.00 | 11.16 | 8.00 | 5.21 | 5.00 | |
| 3129 | 0.48 | 1.72 | 2.20 | 2.00 | 2.70 | 4.73 | 4.91 | 7.43 | 8.50 | 12.34 | 10.50 | 3.85 | 3.00 | |
| 3130 | 0.89 | 1.40 | 2.29 | 2.00 | 5.42 | 2.59 | 4.62 | 8.01 | 8.00 | 12.63 | 10.00 | 5.97 | 5.00 | |
| 3131 | 0.59 | 1.94 | 2.53 | 2.10 | 4.63 | 3.57 | 5.68 | 8.20 | 9.00 | 13.88 | 12.00 | 2.44 | 2.25 | |
| 3132 | 0.92 | 0.32 | 1.24 | 1.25 | 4.51 | 3.32 | 0.61 | 7.83 | 6.00 | 8.44 | 7.00 | 4.62 | 4.00 | |
| 3133 | 0.42 | 0.74 | 1.16 | 1.25 | 1.99 | 2.49 | 6.91 | 4.48 | 6.00 | 11.39 | 10.00 | 4.42 | 2.00 | |
| 3134 | 1.12 | 0.66 | 1.78 | 2.00 | 5.74 | 2.50 | 2.78 | 8.24 | 6.00 | 11.02 | 7.00 | 4.00 | 3.00 | |
| 3135 | 1.40 | 0.62 | 2.02 | 0.85 | 1.75 | 4.96 | 4.85 | 6.71 | 7.00 | 11.56 | 8.00 | ..... | ..... |  |
| 3136 | 1.94 | 0.48 | 2.42 | 2.25 | 5.98 | 2.35 | 0.46 | 8.33 | 7.00 | 8.79 | 8.00 | 9.17 | 8.00 | |
| 3137 | 6.25 | 1.14 | 7.39 | 7.00 | ..... | ..... | 3.27 | 4.70 | ..... | 7.97 | 7.00 | 9.29 | 8.00 | |
| 3138 | 0.82 | ..... | 0.82 | 0.40 | 6.97 | 3.63 | 0.29 | 10.60 | 7.00 | 10.89 | 8.00 | 3.41 | 2.00 | |
| 3139 | ..... | .. | .. | ..... | 12.73 | 4.28 | 0.28 | 17.01 | 15.00 | 17.29 | 17.00 | ..... | ..... |  |
| 3140 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 50.00 | 50.00 | |
| 3141 | 15.76 | .. | 15.76 | 15.00 | ..... | .. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |
| 3142 | 1.90 | 1.36 | 3.26 | 3.00 | 4.56 | 1.54 | 2.11 | 6.10 | 6.00 | 8.21 | 9.00 | 4.73 | 5.00 | |

TRADE VALUATION OF FERTILIZERS.

In 1894 this Station stopped printing trade valuations and the reasons therefor were then explained. As letters are occasionally received in which correspondents ask for trade valuations, the reasons for not printing them are here briefly restated.

The chief reason is that *commercial* values are not the same as *agricultural* values. Trade values are determined by market conditions, the agricultural value is measured by the increase of crop. Printing trade valuations increases the tendency, already far too strong, to purchase fertilizers on the *ton* basis without regard to the content or form of plant food. The agricultural value of a fertilizer depends upon the amount and form of nitrogen, phosphoric acid and potash it contains and the use to which it is to be put. The purchase of a fertilizer is really the purchase of one or more of these ingredients, and the thing of first importance is not the trade value of a ton, but the kinds and pounds of plant food contained in a ton.

In the selection of a fertilizer, the first question to be decided is, what use is to be made of it. Is it nitrogen, phosphoric acid or potash that is needed, or is it any two or all three that must be had? Is the fertilizer to supplement farm manures, to act as a "starter" for the crop or must it furnish all the plant food for the crop?

Having decided just what plant food is needed, it is now time to consult the fertilizer bulletin and see which of the brands there given has an analysis nearest to the required one. In this selection generally only high grade goods (those having high percentages of plant food) should be considered, as high grade goods cannot be made from inferior sources of plant food. Freight costs no more on a ton of goods having 500 pounds of plant food than on a ton having only 200 pounds of plant food, nor is the cost of mixing a ton of high grade goods greater than the cost of mixing low grade goods.

The final step is to inquire prices and buy the kind which comes nearest to meeting the needs at the lowest price per ton. The cost, although of great importance, is to be considered *after* the kinds and amounts of plant food needed are decided upon.

“SCIENTIFIC FERTILIZER.”

CHAS. D. WOODS.

In May, 1903, a correspondent brought to the Station a sample of fertilizer taken from a bag in the possession of W. H. Brackett and Son, Dixfield, and said to have been brought into the State in 1902. Our correspondent stated that the goods are being bought by farmers clubs and granges and that they retail at 97 cents per hundred. From what we could learn these goods are bought outside of the State and according to a ruling made several years since by the attorney general do not, on this account, come under the provisions of the fertilizer law. The bag in which the goods were packed was branded as follows:—

| | |
|-----------------------------|------------------------|
| “Ammonia | 2.10 to 2.50 per cent. |
| Equivalent to nitrogen.... | 1.72 to 2.05 |
| Total phosphoric acid..... | 8.50 to 8.50 |
| Available phosphoric acid.. | 7.40 to 8.40 |
| Soluble phosphoric acid... | 4. to 4.25 |
| Reverted phosphoric acid.. | 3.40 to 4.15 |
| Insoluble phosphoric acid.. | 1. to 1.10 |
| Potash, actual..... | 2.15 to 2.65 |

Manufactured by the Scientific Fertilizer Company, Herrs Island, Pittsburg, Pa.”

The sample was analyzed with the following results:

| | | Found. | Guaranteed. |
|-------------------|----------------------------|--------|-------------|
| | | % | % |
| Nitrogen | { Soluble in water..... | .36 | |
| | { Insoluble in water | 1.50 | |
| | { Total | 1.86 | 1.72 |
| Phosphoric acid.. | { Soluble | 4.29 | 4.00 |
| | { Reverted | 2.76 | 3.40 |
| | { Insoluble | 3.80 | 1.00 |
| | { Available | 7.05 | 7.40 |
| | { Total | 10.85 | 8.50 |
| Potash..... | ..... | 2.09 | 2.15 |

THE LAW REGULATING THE · USE OF THE BABCOCK TEST.

Eight years ago the Legislature passed "An Act for the protection of Dairymen" which has been very generally conformed to by the creameries of the State. No funds were appropriated for the enforcement of the law but under section four any one can enter complaint to any inspector of milk, sheriff, deputy sheriff or constable for violation of any part of the law. The fine varies from ten to one hundred dollars and on conviction one-half goes to the complainant. It is therefore in the power of every patron of a creamery to see that the glassware has been properly tested, that acid of proper strength is used in the test and that the person making the test has a certificate of competency. All the glassware tested by this Station has the letters M. A. E. S. etched on so that they are plainly visible and cannot wear off. A complaint has recently been received that one creamery is not using glassware tested by the Station. The case has been investigated and the creamery is now using properly tested glassware. As it has been several years since the law has been printed in a Station publication it is here given in full.

CHAS. D. WOODS.

CHAPTER 169 OF THE ACTS OF 1895.

An Act for the Protection of Dairymen.

Section 1. All bottles pipettes or other measuring glasses used by any person, firm or corporation, or their agents or employes, at any creamery, butter factory, cheese factory or condensed milk factory, or elsewhere in this State, in determining by the Babcock test, or by any other test, the value of milk or cream received from different persons or parties at such creameries or factories, shall before such use be tested for accuracy

of measurement and for accuracy of the per cent scale marked thereon. Such bottles, pipettes or measuring glasses shall bear in marks or characters ineffaceable the evidence that such test has been made by the authority named in section two of this act. And no inaccurate bottles, pipettes or other glasses shall bear such marks or characters.

Sect. 2. It is hereby made the duty of the Director of the Maine Agricultural¹ Experiment Station, or other competent person designated by him, to test the accuracy of all bottles, pipettes or other measuring glasses used by persons, firms or corporations in this State buying or pooling milk or cream, or apportioning butter or cheese made from the same, by the contents of butter fat contained therein. The Director of the Experiment Station or the person designated by him, shall mark such bottles, pipettes or other measuring glasses as are found correct, in marks or characters which cannot be erased, and which marks or characters shall stand as proof that they have been so tested. The Director of the Experiment Station shall receive for such service the actual cost incurred, and no more, the same to be paid by the persons or corporations for whom it is done.

Sect. 3. Any person, either for himself or in the employ of any other person, firm or corporation, who manipulates the Babcock test or any other test, whether mechanical or chemical, for the purpose of measuring the contents of butter fat in milk or cream for a basis of apportioning the value of such milk or cream, or the butter or cheese made from the same, shall secure a certificate from the superintendent of the dairy school at the College of Agriculture of the University of Maine² that he or she is competent and well qualified to perform such work. The rules and regulations in the application for such certificate and in the granting of the same shall be such as the superintendent of that school may arrange, and the fee for issuing a certificate shall in no case exceed one dollar, the same to be paid by the applicant.

Sect. 4. Whoever uses, or has in his possession with intent to use, at any creamery, butter factory, cheese factory or condensed milk factory, any sulphuric acid of less than one and

1. "State College Experiment Station" in original act.

2. "State College of Agriculture and Mechanic Arts" in original act.

eighty-two hundredths of specific gravity in the process known as the Babcock test, or any other test for determining the butter fat contents of milk or cream, shall on conviction pay a fine not exceeding twenty-five dollars for the first offense, and for a second offense a sum not exceeding fifty dollars. Any person, firm or corporation violating the provisions of section one of this act, shall on conviction pay a fine not exceeding fifty dollars for the first offense, and for a second offense a sum not exceeding one hundred dollars; and any person violating section three of this act shall on conviction pay a fine not exceeding ten dollars. And it shall be the duty of every inspector of milk, sheriff, deputy sheriff and constable to institute complaint against any person or persons violating the within named provisions of this act, and on conviction one-half of the fines shall go to complainant and the balance to the State.

Sect. 5. This act shall take effect in six months from the date of its approval.

Approved March 27, 1895.

NITRATE OF SODA AND MURIATE OF POTASH
AS TOP DRESSING FOR GRASS LAND.

CHAS. D. WOODS.

Four half acre plots were laid off in a field that had been in grass for four years. The field was well and apparently evenly stocked with mixed grasses, chiefly timothy. The chemicals were applied as a fine spray by the use of a four-rowed automatic spray pump such as is used for spraying potatoes. In this way an even distribution of the fertilizer was insured. The chemicals were applied May 9, 1903. This was a bright sunny day with no wind of any amount, the spraying apparatus worked well and the chemicals were evenly applied.

The season was unfavorable for this class of an experiment because of the small rainfall in May and June which was probably insufficient to redissolve the chemicals and carry them to the roots of the plants. May 19 there was a rainfall of .25 inch. The next appreciable rainfall was of .34 inch on June 9. On June 12 and 13, 1.28 inches of rain fell. Probably not until these rains or five weeks after the application of the fertilizer did they become available to the grass. Because of the rain it was impracticable to harvest the crop until August 2. The copious rains in July kept the grass growing so that at cutting the timothy was not seriously over ripe. The soil being a clay loam, well stocked with humus, is not "leachy" and probably none of the nitrate or muriate was carried to such a depth as to be beyond the reach of the grass roots.

Unfavorable as the season was, the application of the nitrate of soda was probably profitable, for it cost practically no more to harvest the increased yield and the 700 to 1,000 pounds of hay per acre is worth about double the cost of the ninety pounds of nitrate and its application. In this year, on this soil and with

timothy, the potash seems to have been of no benefit. The details are given below, but in interpreting the results the nature of the season must be kept in mind.

| Plot. | Fertilizer. | Yield of hay per plot. lbs. | Value at \$12 per ton. |
|------------|----------------------------------------------------------------------|-----------------------------------|---------------------------|
| O | None | 1825 | \$10 95 |
| N | 45 lbs. nitrate of soda..... | 2310 | 13 86 |
| N-P..... | { 45 lbs. nitrate of soda..... } 45 lbs. muriate of potash..... } | 2175 | 13 05 |
| P | 45 lbs. muriate of potash..... | 1880 | 11 28 |
| O and P... | ..... | 3705 | 22 23 |
| N and N-P | ..... | 4485 | 26 91 |
| | Increase from use of 90 lbs. nitrate of soda ... | 790 | 4 68 |
| | Cost of 90 lbs. nitrate of soda, applied. . . . . | ..... | 2 40 |

